



Joe R. Nichols

County Engineer - Water Dept.

St. Charles County

QUARTERLY REPORT

ST. CHARLES COUNTY WELL FIELD

MONITORING PROJECT

GRANT NO. DE-FG05-89OR21864

SUPERSEDED

Prepared by: Stanley Remington
October, November and December, 1994

QUARTERLY REPORT

MONTHLY REPORT

OCTOBER 1994

BY

Stanley M. Remington
Consulting Hydrologist

I. CHEMICAL ANALYSES

The results from the analyses of well number PW-2 were received and are appended. These samples were taken in September 1994. All of the results were normal, that is, no notable changes from all previous analyses were noted. All are within NPDES limits. One sample of treated water from the Weldon Spring Chemical plant site is appended. Again the results show that the treatment method used by the Department is working very well. All chemical parameters checked for were well below the NPDES limits. Enclosed are the results of the Quarterly site and quarry treatment plant effluent data summary - Third Quarter 1994. This shows the results of all the agencies testing the treated waters at the Chemical Plant site and from the quarry. Also shown is the distribution list to whom the results are sent.

Well number PW-9 was sampled in October 1994. The results have not yet been received.

II. MEETINGS

I attended the eighth annual St. Louis Regional Environmental Conference on October 11, 1994. I attended the session on water and the environment. The consensus of

opinion among the speakers is that the costs of analyzing for hazardous materials in water could go over one trillion dollars in the next 10 years if the requirement limits of the various government agencies become more strict. Some people are talking in terms of parts per trillion and parts per quadrillion. To put this in its proper perspective, parts per quadrillion would be a 10 with 16 zeros following it. All admit that no data exists on what harm this would do to anyone. Any element can be found anywhere on this planet in quantities this small. Some in the public are becoming paranoid and are laying their unfounded fears upon staff members in the U.S. Congress who are the ones writing the new drinking water standards and who in turn give them to their representatives and senators to vote into law. The congress merely rely upon the words of the staff members, most of whom are lawyers, who themselves are in disagreement. The conclusion of the speakers is that the situation is becoming ludicrous.

III. FUTURE PLANS

I will split samples with the Department of Energy for the quarterly sampling. I will sample wells RMW-2 and PW-8. This will be sometime in the middle of November. I may sample a batch of the treated water at the Chemical Plant site.

IV. MISCELLANEOUS

Enclosed is the St. Charles County Water Departments' Monthly Water Usage Report for September 1994 and the results of analyses of the gross alpha and gross beta of the raw and treated waters taken from the St. Charles County Court, Weldon Spring Treatment Plant. This is done by the St. Louis County Department of Health. The period covered was 8/1/94 - 8/31/94.

Mark Evans from the Public Health Department, Agency for Toxic Substances contacted me last month concerning the results that the St. Charles County found in their sampling for pesticides from our pumping wells. I referred him to the Water Department of the St. Charles County for any information that we have. He was only interested in the results from the past year.

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

October 11, 1994

Stanley M. Remington
919 Broadmoor Lane
St. Charles, MO 63301

RE: ATAS #10974.01
Weldon Spring

Dear Mr. Remington:

Enclosed are the analytical reports for the samples received in our laboratory on September 20, 1994.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,



Jeffrey A. Carr
Project Manager

Enclosures

JAC/mb

ATAS

"Professional Commitment"

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1097401E(209)

DATE : 10-11-94

SAMPLE MATRIX : WATER
ATAS # : 10974.01
DATE SUBMITTED: 09-20-94
DATE EXTRACTED: 09-23-94
DATE ANALYZED : 09-25-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : PW-2

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND = NOT DETECTED ABOVE REPORTING LIMIT

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: BK0923E(209)

DATE : 10-11-94

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 09-20-94
DATE EXTRACTED: 09-23-94
DATE ANALYZED : 09-25-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
O-NITROTOLUENE	12.0	ND
P-NITROTOLUENE	8.0	ND
M-NITROTOLUENE	7.9	ND

ND = NOT DETECTED ABOVE REPORTING LIMIT

CLIENT: STANLEY M. REMINGTON
 919 BROADMOOR LANE
 ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: QC0923E(209)

DATE : 10-11-94

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE
DATE SUBMITTED: 09-20-94
DATE EXTRACTED: 09-23-94
DATE ANALYZED : 09-25-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
SAMPLE ID : LABORATORY CONTROL SAMPLE

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

COMPOUND	SPIKE ADDED (ug/L)	AMT. FOUND SMPL. (ug/L)	AMT. FOUND LCS (ug/L)	PERCENT RECOVERY	QC LIMIT RECOVERY
HMX	1600	ND	1510	94 %	46-151
RDX	1300	ND	1370	105 %	72-129
1,5-TNB	900	ND	904	100 %	74-118
2,4,6-TRINITROPHENYL	1650	ND	1820	110 %	58-120
1,3-DNB	475	ND	478	101 %	79-132
TNT	750	ND	753	100 %	61-145
NITROBENZENE	850	ND	867	102 %	68-135
2,6 DNT	1150	ND	1200	104 %	77-125
2,4 DNT	700	ND	646	92 %	70-134
o-NITROTOLUENE	1450	ND	1500	103 %	70-131
p-NITROTOLUENE	1000	ND	983	98 %	73-116
m-NITROTOLUENE	950	ND	980	103 %	71-127

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1097401R(209)

DATE : 10-11-94

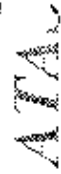
SAMPLE MATRIX : WATER
ATAS EPISODE : #10974
DATE SUBMITTED: 09-20-94
DATE ANALYZED : 10-06-94
PROJECT : WELDON SPRING

CLIENT ID	ATAS ID	UNITS	RADIONUCLIDE	RESULT
PW-2	10974.01	pCi/L	GROSS ALPHA	3 +/- 2*
PW-2	10974.01	pCi/L	GROSS BETA	8 +/- 2*
PW-2	10974.01	mg/L	TOTAL URANIUM	<0.005

* VARIABILITY OF THE RADIOACTIVE DISINTEGRATION PROCESS (COUNTING ERROR) AT THE 95%
CONFIDENCE LEVEL, 1.96σ.

pCi = PICOCURIES PER LITER

mg/L = PARTS PER MILLION (PPM)



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9/20/94	1420	Work Done	(42)	9-20-94
AK				

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

October 25, 1994

Stanley M. Remington
919 Broadmoor Lane
St. Charles, MO 63301

RE: ATAS #11290.01
Weldon Spring

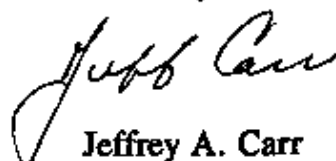
Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on October 17, 1994.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,



Jeffrey A. Carr
Project Manager

Enclosures

JAC/mb

ATAS

"Professional Commitment"

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1129001M(210)

DATE : 10-25-94

SAMPLE MATRIX : WATER
ATAS # : 11290.01
DATE SUBMITTED: 10-17-94
PROJECT : WELDON SPRING
SAMPLE ID : NP-EPS1-101794-C

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
INORGANICS					
NITRATE-NITRITE	0.10	mg/L	2.0	10-20-94	EPA 353.2
METALS					
ARSENIC	10.0	ug/L	ND	10-20-94	SW 6010
CHROMIUM	1.0	ug/L	ND	10-20-94	SW 6010
LEAD	3.0	ug/L	ND	10-20-94	SW 6010
MANGANESE	1.0	ug/L	3.4	10-20-94	SW 6010
MERCURY	0.15	ug/L	ND	10-21-94	SW 7470
SELENIUM	5.0	ug/L	ND	10-20-94	SW 6010

mg/L = PARTS PER MILLION (PPM)

ug/L = PARTS PER BILLION (PPB)

ND = NOT DETECTED ABOVE REPORTING LIMIT

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: QC1020M(210)

DATE : 10-25-94

QA/QC

<u>DESCRIPTION</u>		<u>PARAMETER</u>	<u>RESULTS</u>
METHOD BLANK	10-20-94	ARSENIC	<10.0 ug/L
METHOD BLANK	10-20-94	CHROMIUM	<1.0 ug/L
METHOD BLANK	10-20-94	LEAD	<3.0 ug/L
METHOD BLANK	10-20-94	MANGANESE	<1.0 ug/L
METHOD BLANK	10-21-94	MERCURY	<0.15 ug/L
METHOD BLANK	10-20-94	SELENIUM	<5.0 ug/L
METHOD BLANK	10-20-94	NITRATE/NITRITE	<0.10 mg/L
BLANK SPIKE	10-20-94	ARSENIC	114 % RECOVERY
BLANK SPIKE	10-20-94	CHROMIUM	107 % RECOVERY
BLANK SPIKE	10-20-94	LEAD	107 % RECOVERY
BLANK SPIKE	10-20-94	MANGANESE	105 % RECOVERY
BLANK SPIKE	10-21-94	MERCURY	97 % RECOVERY
BLANK SPIKE	10-20-94	SELENIUM	114 % RECOVERY
BLANK SPIKE	10-20-94	NITRITE/NITRATE	101 % RECOVERY

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1129001R(210)

DATE : 10-25-94

SAMPLE MATRIX : WATER
ATAS EPISODE : #11290
DATE SUBMITTED: 10-17-94
DATE ANALYZED : 10-24-94
PROJECT : WELDON SPRING

CLIENT ID	ATAS ID	UNITS	RADIONUCLIDE	RESULT
NP-EPS1-101794-C	11290.01	pCi/L	GROSS ALPHA	6 +/- 4*
NP-EPS1-101794-C	11290.01	pCi/L	GROSS BETA	4 +/- 5*
NP-EPS1-101794-C	11290.01	mg/L	TOTAL URANIUM	<0.005

* VARIABILITY OF THE RADIOACTIVE DISINTEGRATION PROCESS (COUNTING ERROR) AT THE 95%
CONFIDENCE LEVEL, 1.96σ.

pCi = PICOCURIES PER LITER

mg/L = PARTS PER MILLION (PPM)

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1129001E(210)

DATE : 10-25-94

SAMPLE MATRIX : WATER
ATAS # : 11290.01
DATE SUBMITTED: 10-17-94
DATE EXTRACTED: 10-18-94
DATE ANALYZED : 10-19-94
METHOD REF. : SW846-8090, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : NP-EPS1-101794-C

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>COMPOUND</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
2,6-DINITROTOLUENE	0.0110	ND
2,4-DINITROTOLUENE	0.0221	ND

OA/OC SURROGATE RECOVERY

TETRACHLORO-M-XYLENE	78 %
DECACHLOROBIPHENYL	75 %

ND= NOT DETECTED ABOVE REPORTING LIMIT

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: BK1018E(210)

DATE : 10-25-94

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 10-17-94
DATE EXTRACTED: 10-18-94
DATE ANALYZED : 10-19-94
METHOD REF. : SW846-8090, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>COMPOUND</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
2,6-DINITROTOLUENE	0.010	ND
2,4-DINITROTOLUENE	0.020	ND

QA/QC SURROGATE RECOVERY

TETRACHLORO-M-XYLENE	80 %
DECACHLOROBIPHENYL	74 %

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: QC1018E(210)

DATE : 10-25-94

SAMPLE MATRIX : WATER
ATAS # : SPIKE BLANK/SPIKE BLANK DUPLICATE
DATE SUBMITTED: 10-17-94
DATE EXTRACTED: 10-18-94
DATE ANALYZED : 10-19-94
METHOD REF. : SW846-8090, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : SPIKE BLANK/SPIKE BLANK DUPLICATE

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

COMPOUND	SPIKE ADDED (ug/L)	AMT. FOUND EMPL. (ug/L)	AMT. FOUND SB (ug/L)	PERCENT RECOVERY
2,4 DNT	0.250	ND	0.224	90 %
2,4 DNT	0.250	ND	0.232	93 %

COMPOUND	AMT. FOUND SBD. (ug/L)	SBD PERCENT RECOVERY	RELATIVE PERCENT DIFFERENCE
2,6 DNT	0.226	90 %	0.0 %
2,4 DNT	0.219	88 %	5.5 %

Validation Documentation:

ESAIL 4.1.2.1. Rev. 6. Update 11/92

[illegible]

Technical Reviewer

Checked By

Samplers' Signature

Relinquished By	Received By	Date	Time	Reason for Transfer	Seal Intact? (Y/N)	Cooler Temp
<i>C. D. Charles</i>	<i>William F. Sullivan</i>	10/17/94	11:55			
<i>William F. Sullivan</i>	<i>William F. Sullivan</i>	10/17/94	12:40			

AUTHORIZATION

11K-F Procurement

Date

ESS

Date

Site Shipping Officer

Date _____



Department of Energy

Oak Ridge Operations
Weldon Spring Site
Remedial Action Project Office
7295 Highway 94 South
St. Charles, Missouri 63304

October 6, 1994

Distribution:

**QUARTERLY SITE AND QUARRY WATER TREATMENT PLANT EFFLUENT DATA
SUMMARY -- THIRD QUARTER 1994**

Enclosed please find the subject effluent data summary sheets for the batches of water treated and discharged during the third quarter of 1994. Eight batches (S#031 through S#038) and three batches (Q#022 and Q#024) have been treated and discharged from the site and quarry water treatment plants, respectively

If you have any questions, please call me or Bruce Ballew at (314)441-8978.

Sincerely,

A handwritten signature in dark ink, appearing to read "S H McCracken", is written over the typed name.

Stephen H. McCracken
Project Manager
Weldon Spring Site
Remedial Action Project

Enclosure:
As stated

cc w/o enclosure:
Karen Marcus, MDNR
Martha Windsor/Geri Kountzman, MDNR

Distribution List:

Larry Erickson
Division of Environmental Quality
Missouri Department of Natural Resources
Post Office Box 176
Jefferson City, Missouri 65102

Dan Wall
Remedial Project Manager
U.S. Environmental Protection Agency
Region VII
726 Minnesota Avenue
Kansas City, Kansas 66101

Stanley Remington
Consulting Hydrologist
919 Broadmoor Lane
St. Charles, Missouri 63301

Wayne Black
St. Louis County Health Department
111 S. Meremac
2nd Floor
Clayton, Missouri 63105

Conn Roden
St. Louis County Health Department
111 S. Meremac
2nd Floor
Clayton, Missouri 63105

Terry Gloriod
Vice President for Production
St. Louis County Water Department
535 North New Ballas
St. Louis, Missouri 63141

Dave Visintainer
City of St. Louis Water Division
Chain of Rocks Plant
10450 Riverview Drive
St. Louis, Missouri 63137

SUMMARY OF QWTP (BATCH 022) ANALYTICAL RESULTS

FROM ALL AGENCIES RECEIVING SAMPLES ON 6/16/94

6/29/94 1300

PARAMETER	NPDES LIMITS (mg/l)	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
BOD5	*	<3.0 mg/l	<2.0 mg/l	NA	NA	NA
COD	90 / 60	<5.0 mg/l		NA	NA	NA
TSS	50 / 30	<4 mg/l		NA	NA	NA
ARSENIC	0.1	<0.001 mg/l	<0.010 mg/l	NA	<0.010 mg/l	
BARIUM	1.5	0.164 mg/l		NA	0.193 mg/l	
CADMIUM	0.02	0.0007 mg/l		NA	<0.003 mg/l	
CHROMIUM	0.1	<0.004 mg/l		NA	<0.005 mg/l	
COPPER	1	<0.0025 mg/l		NA	<0.010 mg/l	
IRON	0.6	<0.0225 mg/l		NA	<0.055 mg/l	
LEAD	0.1	0.0011 mg/l		NA	<0.003 mg/l	
MANGANESE	0.1	0.0207 mg/l	<0.010 mg/l	NA	0.0254 mg/l	
MERCURY	0.004	<0.00010 mg/l		NA	<0.0002 mg/l	
SELENIUM	0.02	0.0023 mg/l		NA	0.006 mg/l	
SILVER	0.1	<0.0025 mg/l		NA	<0.010 mg/l	
ZINC	5.0	<0.015 mg/l		NA	<0.0150 mg/l	
CYANIDE, AMENABLE	0.0075	<0.004 mg/l	<0.005 mg/l	NA	NA	<0.002 ug/l
2,4-DNT	0.22 ug/l	<0.019 ug/l	<0.025 ug/l	NA	<0.02 ug/l	0.032 mg/l
FLUORIDE	4.0	<0.200 mg/l		NA	<0.10 mg/l	<0.1 mg/l
NITRATE AS N	*	<0.200 mg/l		NA	NA	288.5 mg/l
SULFATE	500	274 mg/l	336 mg/l	NA	NA	318.2 mg/l
CHLORIDE	*	322.3 mg/l	340 mg/l	NA	NA	
GROSS ALPHA	*	5.3 ± 5.6 pCi/l	3.4 ± 2.7 pCi/l	NA	10 ± 7 pCi/l	2.4 ± 1.2 pCi/l
GROSS BETA	*	17.4 ± 6.3 pCi/l	18.3 ± 1.7 pCi/l	NA	24 ± 7 pCi/l	15.7 ± 1.3 pCi/l
URANIUM, TOTAL	**	1.44 ± 0.2 pCi/l	0.9 ± 0.3 pCi/l	NA	<3.4 pCi/l	1.2 ± 0.3 pCi/l
RADIUM-226	*	1.03 pCi/l	0.4 ± 0.1 pCi/l	NA	NA	NA
RADIUM-228	*	4.30 pCi/l		NA	NA	NA
THORIUM-230	*	<1.00 pCi/l	<0.1 pCi/l	NA	NA	NA
THORIUM-232	*	<1.00 pCi/l	<0.1 pCi/l	NA	NA	NA
ASBESTOS	*	<0.18 MFL		NA	NA	NA
PRIORITY POLLUTANTS (SEE BELOW)						
1. SEMI-VOA	*	N.D.	NA	NA	NA	NA
2. VOA	*	N.D.	NA	NA	NA	NA
3. PCB/PEST	*	N.D.	<0.25 ug/l	NA	NA	NA
pH	6.0 - 9.0 S.U.	6.09	NA	NA	NA	NA

* = MONITORING ONLY, NO PERMIT DISCHARGE LIMITS

** = Design Value of 30 pCi/l; Not to Exceed 100 pCi/l

NA = Not Analyzed by Agency

█ = Data received after batch was discharged

cc: S. Anderson
C. Branchfield
B. Freeman
Glen Schmidt
Bulletin Board
Kathy McClintock

SUMMARY OF QWTP (BATCH 023) ANALYTICAL RESULTS

FROM ALL AGENCIES RECEIVING SAMPLES ON 8/2/94

8/16/94 1000

PARAMETER	NPDES LIMITS (mg/l)	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	11.0 mg/l		NA	NA	NA
TSS	50 / 30	<2.00 mg/l		NA	NA	NA
ARSENIC	0.1	<0.006 mg/l		NA	NA	<0.001 mg/l
CHROMIUM	0.1	<0.005 mg/l		NA	NA	0.00180 mg/l
COPPER	1	<0.006 mg/l		NA	NA	0.001 mg/l
LEAD	0.1	<0.003 mg/l		NA	NA	<0.001 mg/l
MANGANESE	0.1	0.012 mg/l		NA	NA	0.012
MERCURY	0.004	<0.0001 mg/l		NA	NA	<0.0001 mg/l
SELENIUM	0.02	<0.005 mg/l		NA	NA	0.00136 mg/l
CYANIDE, AMENABLE	0.0075	<0.005 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.019 ug/l		NA	NA	
FLUORIDE	4.0	<0.03 mg/l		NA	NA	
NITRATE+NITRITE AS N	*	<0.02 mg/l		NA	NA	
SULFATE	500	216 mg/l		NA	NA	
CHLORIDE	*	950 mg/l		NA	NA	
GROSS ALPHA	*	<2.00 pCi/l		NA	NA	1.3 ± 1.0 pCi/l
GROSS BETA	*	18.8 pCi/l		NA	NA	9.5 ± 1.2 pCi/l
URANIUM, TOTAL	**	1.99 pCi/l		NA	NA	1.2 ± 0.3 pCi/l
RADIUM-226	*	0.45 ± 0.31 pCi/l		NA	NA	NA
RADIUM-228	*	-0.10 ± 0.80 pCi/l		NA	NA	NA
THORIUM-230	*	0.32 ± 0.27 pCi/l		NA	NA	NA
THORIUM-232	*	0.05 ± 0.11 pCi/l		NA	NA	NA
PRIORITY POLLUTANTS (SEE BELOW)						
1. SEMI-VOA	*	<25 ug/l	NA	NA	NA	NA
2. VOA	*	Detailed Below ****	NA	NA	NA	NA
3. PCBs	*	<2.00 ug/l	NA	NA	NA	NA
4. PESTICIDES		<0.5 ug/l				
5. METALS / OTHERS	*	Detailed Below ****				
pH	6.0 - 9.0 S.U.	6.96	NA	NA	NA	NA
* = MONITORING ONLY, NO PERMIT DISCHARGE LIMITS						
** = Design Value of 30 pCi/l; Not to Exceed 100 pCi/l						
*** = Parameter required once/month. This month's sample was collected earlier in the month.						
**** = 32 ug/l acetone, 89 ug/l chloroform, 12 ug/l bromodichloromethane						
***** = 195 ug/l Barium, 22 ug/l Iron, 12.9 ug/l Zinc, <1.00 pCi/l Polonium-210, <200 pCi/l Radon-222						
NA = Not analyzed by agency.						
= Data received after batch was discharged						

cc: S. Anderson
C. Branchfield
B. Freeman
Glen Schmidt
Bulletin Board
Kathy McClintock

SUMMARY OF QWTP (BATCH 024) ANALYTICAL RESULTS

FROM ALL AGENCIES RECEIVING SAMPLES ON 9/13/94

9/21/94 0840

PARAMETER	NPDES LIMITS (mg/l)	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 50	10.0 mg/l		NA	NA	NA
TSS	50 / 30	2.00 mg/l		NA	NA	NA
ARSENIC	0.1	<0.006 mg/l		NA	NA	
CHROMIUM	0.1	<0.005 mg/l		NA	NA	
COPPER	1	<0.001 mg/l		NA	NA	
LEAD	0.1	<0.003 mg/l		NA	NA	
MANGANESE	0.1	0.0194 mg/l		NA	NA	
MERCURY	0.004	0.00016 mg/l		NA	NA	
SELENIUM	0.02	<0.005 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.019 ug/l		NA	NA	
FLUORIDE	4.0	0.108 mg/l		NA	NA	
NITRATE+NITRITE AS N	*	<0.40 mg/l		NA	NA	
SULFATE	500	270 mg/l		NA	NA	
CHLORIDE	*	318 mg/l		NA	NA	
GROSS ALPHA	*	1.71 pCi/l		NA	NA	4.2 ± 1.4 pCi/l
GROSS BETA	*	8.96 pCi/l		NA	NA	11.9 ± 1.2 pCi/l
URANIUM, TOTAL	**	2.93 pCi/l		NA	NA	2.5 ± 0.4 pCi/l
RADIUM-226	*	0.8 ± 0.8 pCi/l		NA	NA	NA
RADIUM-228	*	0.7 ± 0.7 pCi/l		NA	NA	NA
THORIUM-230	*	0.1 ± 0.6 pCi/l		NA	NA	NA
THORIUM-232	*	0.0 ± 0.5 pCi/l		NA	NA	NA
PRIORITY POLLUTANTS (SEE BELOW)						
1. SEMI-VOA	*	NA	NA	NA	NA	NA
2. VOA	*	NA	NA	NA	NA	NA
3. PCBs	*	<0.25 ug/l	NA	NA	NA	NA
4. PESTICIDES	*	NA				
5. METALS / OTHERS	*	Detailed Below *****				
pH	6.0 - 9.0 S.U.	6.21	NA	NA	NA	NA
* = MONITORING ONLY, NO PERMIT DISCHARGE LIMITS						
** = Design Value of 30 pCi/l. Not to Exceed 100 pCi/l.						
*** = Parameter required once/month.						
***** = ACTINIUM, DUE 9/28						
NA = Not analyzed by agency.						
= Data received after batch was discharged						

cc: S. Anderson
C. Branchfield
Glen Schmidt
Bulletin Board
Kathy McClintock

SUMMARY OF SWTP (BATCH 031) ANALYTICAL RESULTS

From all parties receiving samples on 6/27/94

7/01/94 1125

PARAMETER	NPDES LIMITS (mg/l)	PMC DATA RESULTS	MOENR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 50	<5.00 mg/l		NA	NA	NA
TSS	50 / 30	<2.00 mg/l		NA	NA	NA
ARSENIC	0.1	<0.003 mg/l		NA	NA	<0.001 mg/l
CHROMIUM	0.1	<0.007 mg/l		NA	NA	0.00046 mg/l
LEAD	0.1	<0.001 mg/l		NA	NA	<0.001 mg/l
MANGANESE	0.1	<0.003 mg/l		NA	NA	0.00105 mg/l
MERCURY	0.004	<0.0001 mg/l		NA	NA	<0.0001 mg/l
SELENIUM	0.02	0.00304 mg/l		NA	NA	0.00137 mg/l
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		NA	NA	<0.0007 mg/l
2,4-DNT	0.22 ug/l	<0.019 ug/l		NA	NA	<0.0028 ug/l
FLUORIDE	4.0	1.44 mg/l		NA	NA	1.26 mg/l
NITRATE + NITRITE AS N	20	6.00 mg/l		NA	NA	5.28 mg/l
SULFATE	500	213 mg/l		NA	NA	266 mg/l
CHLORIDE	*	70.4 mg/l		NA	NA	77.3 mg/l
GROSS ALPHA	*	3.2 ± 2.8 pCi/l		NA	NA	7.3 ± 1.9 pCi/l
GROSS BETA	*	9.8 ± 3.3 pCi/l		NA	NA	10.1 ± 0.7 pCi/l
URANIUM, TOTAL	**	0.56 ± 0.08 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-226	*	***		NA	NA	
RADIUM-228	*	***		NA	NA	
THORIUM-230	*	***		NA	NA	NA
THORIUM-232	*	***		NA	NA	NA
pH (Std. Units)	6 - 9	8.56 S.U.		NA	NA	
PRIORITY POLLUTANTS (SEE BELOW)						
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.19 ug/l		NA	NA	NA

* = Monitoring Parameter

** = Design Value of 30 pCi/l; Not to Exceed 100 pCi/l

*** = Monitoring parameter once per month. Already sampled this month.

NA = Not Analyzed

= Data received after batch was discharged

cc: S. Anderson
Roy VanHee
Bulletin Board

Mel Roberts
B. Freeman
Glen Schmidt

Kathy McClintock

SUMMARY OF SWTP (BATCH 032) ANALYTICAL RESULTS

From all parties receiving samples on 7/7/94

7/12/94 1030

PARAMETER	NPDES LIMITS (mg/l)	PMC DATA RESULTS	MOENR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	5.00 mg/l		NA	NA	NA
TSS	50 / 30	3.00 mg/l		NA	NA	NA
ARSENIC	0.1	<0.003 mg/l		NA	<0.003 mg/l	<0.003 mg/l
CHROMIUM	0.1	<0.001 mg/l		NA	<0.003 mg/l	0.0004 mg/l
LEAD	0.1	<0.001 mg/l		NA	<0.003 mg/l	<0.001 mg/l
MANGANESE	0.1	0.004 mg/l		NA	<0.003 mg/l	0.0014 mg/l
MERCURY	0.004	<0.0001 mg/l		NA	<0.0001 mg/l	<0.0001 mg/l
SELENIUM	0.02	<0.003 mg/l		NA	<0.0001 mg/l	<0.0001 mg/l
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		NA	<0.003 mg/l	<0.001 mg/l
2,4-DNT	0.22 ug/l	<0.019 ug/l		NA	NA	<0.001 mg/l
FLUORIDE	4.0	2.16 mg/l		NA	<0.003 mg/l	<0.003 mg/l
NITRATE + NITRITE AS N	20	3.70 mg/l		NA	NA	2.14 mg/l
SULFATE	500	196 mg/l		NA	NA	4.55 mg/l
CHLORIDE	*	91.4 mg/l		NA	NA	230.7 mg/l
GROSS ALPHA	*	0.30 ± 2.70 pCi/l		NA	5.33 pCi/l	95.5 mg/l
GROSS BETA	*	8.00 ± 3.40 pCi/l		NA	10.2 ± 1.2 pCi/l	4.9 ± 1.6 pCi/l
URANIUM, TOTAL	**	0.26 ± 0.04 pCi/l		NA	NA	10.2 ± 1.2 pCi/l
RADIUM-226	*	2.40 ± 0.69 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-228	*	2.00 ± 1.80 pCi/l		NA	NA	
THORIUM-230	*	0.27 ± 0.27 pCi/l		NA	NA	
THORIUM-232	*	<0.16 pCi/l		NA	NA	NA
pH (Std. Units)	6 - 9	6.93		NA	NA	NA
PRIORITY POLLUTANTS (SEE BELOW)				NA	NA	
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.30 ug/l		NA	NA	NA
* = Monitoring Parameter						
** = Design Value of 30 pCi/l; Not to Exceed 100 pCi/l						
*** = Monitoring parameter once per month. Already sampled this month.						
NA = Not Analyzed						

= Data received after batch was discharged

cc: S. Anderson
Roy VanHee
Bulletin Board
Mel Roberts
B. Freeman
Glen Schmidt
Kathy McClintock

SUMMARY OF SWTP (BATCH 033) ANALYTICAL RESULTS

From all parties receiving samples on 7/18/94

7/25/94 1030

PARAMETER	NPDES LIMITS (mg/l)	PMC DATA RESULTS	MOENR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	5.00 mg/l		NA	NA	NA
TSS	50 / 30	2.00 mg/l		NA	NA	NA
ARSENIC	0.1	<0.006 mg/l		NA	NA	0.0014 mg/l
CHROMIUM	0.1	<0.007 mg/l		NA	NA	<0.0004 mg/l
LEAD	0.1	<0.003 mg/l		NA	NA	0.0001 mg/l
MANGANESE	0.1	<0.003 mg/l		NA	NA	0.0001 mg/l
MERCURY	0.004	<0.0001 mg/l		NA	NA	<0.0001 mg/l
SELENIUM	0.02	0.006 mg/l		NA	NA	0.0015 mg/l
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		NA	NA	<0.0001 mg/l
2,4-DNT	0.22 ug/l	<0.019 mg/l		NA	NA	2.08 ug/l
FLUORIDE	4.0	2.70 mg/l		NA	NA	3.1 mg/l
NITRATE + NITRITE AS N	20	2.91 mg/l		NA	NA	8.14 mg/l
SULFATE	500	174 mg/l		NA	NA	179.4 mg/l
CHLORIDE	*	202 mg/l		NA	NA	212.4 mg/l
GROSS ALPHA	*	<2.00 pCi/l		NA	NA	1.3 ± 0.9 pCi/l
GROSS BETA	*	9.84 pCi/l		NA	NA	7.3 ± 1.1 pCi/l
URANIUM, TOTAL	**	<1.00 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-226	*	***		NA	NA	
RADIUM-228	*	***		NA	NA	
THORIUM-230	*	***		NA	NA	NA
THORIUM-232	*	***		NA	NA	NA
pH (Std. Units)	6 - 9	7.43		NA	NA	
PRIORITY POLLUTANTS (SEE BELOW)						
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.30 ug/l		NA	NA	NA
* = Monitoring Parameter						
** = Design Value of 30 pCi/l; Not to Exceed 100 pCi/l						
*** = Monitoring parameter once per month. Already sampled this month.						
NA = Not Analyzed						
= Data received after batch was discharged						

cc: S. Anderson
Roy VanHee
Bulletin Board

Mel Roberts
B. Freeman
Glen Schmidt

Kathy McClintock

SUMMARY OF SWTP (BATCH 034) ANALYTICAL RESULTS

8/15/94 0930

From all parties receiving samples on 8/1/94

PARAMETER	NPDES LIMITS (mg/l)	PMC DATA RESULTS	MODNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COO	90 / 60	5.4 mg/l		NA	NA	NA
TSS	50 / 30	<4.0 mg/l		NA	NA	NA
ARSENIC	0.1	<0.001 mg/l	0.025 mg/l	NA	NA	0.0018 mg/l
CHROMIUM	0.1	<0.004 mg/l		NA	NA	0.00059 mg/l
LEAD	0.1	<0.001 mg/l		NA	NA	<0.001 mg/l
MANGANESE	0.1	<0.0025 mg/l	<0.010 mg/l	NA	NA	0.00266 mg/l
MERCURY	0.004	<0.0001 mg/l		NA	NA	<0.0001 mg/l
SELENIUM	0.02	0.0019 mg/l		NA	NA	<0.0001 mg/l
CYANIDE, AMENABLE	0.0075	<0.005 mg/l		NA	NA	0.00104 mg/l
2,4-DNT	0.22 ug/l	<0.001 ug/l	0.035 ug/l	NA	NA	
FLUORIDE	4.0	2.628 mg/l		NA	NA	<0.002 ug/l
NITRATE + NITRITE AS N	20	1.595 mg/l	1.6 mg/l	NA	NA	1.74 mg/l
SULFATE	500	178.8 mg/l		NA	NA	1.53 mg/l
CHLORIDE	*	127.0 mg/l		NA	NA	170.1 mg/l
GROSS ALPHA	*	2.36 pCi/l	4.3 ± 1.1 pCi/l	NA	NA	126.3 mg/l
GROSS BETA	*	6.90 pCi/l	19.5 ± 0.6 pCi/l	NA	NA	3.3 ± 1.3 pCi/l
URANIUM, TOTAL	**	<1.00 pCi/l	1.5 ± 0.7 pCi/l	NA	NA	8.1 ± 1.0 pCi/l
RADIUM-226	*	0.72 ± 0.38 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-228	*	1.20 ± 1.40 pCi/l		NA	NA	
THORIUM-230	*	0.19 ± 0.19 pCi/l		NA	NA	NA
THORIUM-232	*	0.00 ± 0.00 pCi/l		NA	NA	NA
pH (Std. Units)	6 - 9	8.42		NA	NA	
PRIORITY POLLUTANTS (SEE BELOW)						
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.118 ug/l	<0.118 ug/l	NA	NA	NA
* = Monitoring Parameter						
** = Design Value of 30 pCi/l; Not to Exceed 100 pCi/l						
*** = Monitoring parameter once per month. Already sampled this month.						
NA = Not Analyzed						
= Data received after batch was discharged						

cc: S. Anderson
Roy VanHee
Bulletin Board

Mel Roberts
Glen Schmidt
Kathy McClintock

SUMMARY OF SWTP (BATCH 035) ANALYTICAL RESULTS

8/16/94 0930

From all parties receiving samples on 8/11/94

PARAMETER	NPDES LIMITS (mg/l)	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	10.0 mg/l		NA	NA	NA
TSS	50 / 30	<2.00 mg/l		NA	NA	NA
ARSENIC	0.1	<0.006 mg/l	<0.005 mg/l	NA	NA	NA
CHROMIUM	0.1	<0.007 mg/l		NA	NA	NA
LEAD	0.1	<0.003 mg/l		NA	NA	NA
MANGANESE	0.1	<0.003 mg/l	<0.010 mg/l	NA	NA	NA
MERCURY	0.004	<0.0001 mg/l		NA	NA	NA
SELENIUM	0.02	0.00652 mg/l		NA	NA	NA
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		NA	NA	NA
2,4-DNT	0.22 ug/l	<0.019 ug/l	<0.035 ug/l	NA	NA	<0.035 ug/l
FLUORIDE	4.0	2.04 mg/l		NA	NA	2.12 mg/l
NITRATE + NITRITE AS N	20	2.01 mg/l	<1.0 mg/l	NA	NA	1.85 mg/l
SULFATE	500	195 mg/l		NA	NA	294 mg/l
CHLORIDE	*	116 mg/l		NA	NA	124 mg/l
GROSS ALPHA	*	1.0 ± 2.6 pCi/l	<1.1 pCi/l	NA	NA	<1.0 pCi/l
GROSS BETA	*	11 ± 4 pCi/l	8.2 ± 0.8 pCi/l	NA	NA	8.4 ± 1.1 pCi/l
URANIUM, TOTAL	**	0.5 pCi/l	0.4 ± 0.3 pCi/l	NA	NA	<1.0 pCi/l
RADIUM-226	*	***		NA	NA	
RADIUM-228	*	***		NA	NA	
THORIUM-230	*	***		NA	NA	NA
THORIUM-232	*	***		NA	NA	NA
pH (Std. Units)	6 - 9	7.92		NA	NA	
PRIORITY POLLUTANTS (SEE BELOW)						
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.17 ug/l	<0.17 ug/l	NA	NA	NA
* = Monitoring Parameter						
** = Design Value of 30 pCi/l; Not to Exceed 100 pCi/l						
*** = Monitoring parameter once per month. Already sampled this month.						
NA = Not Analyzed						
= Data received after batch was discharged						

cc: S. Anderson
Roy VanHee
Bulletin Board

Mel Roberts
Glen Schmidt
Kathy McClintock

SUMMARY OF SWTP (BATCH 037) ANALYTICAL RESULTS

9/16/94 0920

From all parties receiving samples on 9/7/94

PARAMETER	NPDES LIMITS (mg/l)	PMC DATA RESULTS	MOENR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	10.0 mg/l		NA	NA	NA
TSS	50 / 30	6.00 mg/l		NA	NA	NA
ARSENIC	0.1	<0.006 mg/l		NA	NA	
CHROMIUM	0.1	<0.005 mg/l		NA	NA	
LEAD	0.1	<0.003 mg/l		NA	NA	
MANGANESE	0.1	0.00580 mg/l		NA	NA	
MERCURY	0.004	0.00010 mg/l		NA	NA	
SELENIUM	0.02	<0.005 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.019 ug/l		NA	NA	<0.002 ug/l
FLUORIDE	4.0	2.62 mg/l		NA	NA	2.1 mg/l
NITRATE + NITRITE AS N	20	0.131 mg/l		NA	NA	<0.1 mg/l
SULFATE	500	199 mg/l		NA	NA	173.9 mg/l
CHLORIDE	*	205 mg/l		NA	NA	133.6 mg/l
GROSS ALPHA	*	-4.60 ± 3.50 pCi/l		NA	NA	<1.0 pCi/l
GROSS BETA	*	7.20 ± 4.70 pCi/l		NA	NA	10.7 ± 1.2 pCi/l
URANIUM, TOTAL	**	0.87 ± 0.09 pCi/l		NA	NA	<1.0 pCi/l
RADIUM - 226	*	0.6 ± 0.8 pCi/l		NA	NA	
RADIUM - 228	*	0.6 ± 0.7 pCi/l		NA	NA	
THORIUM - 230	*	0.1 ± 0.6 pCi/l		NA	NA	NA
THORIUM - 232	*	0.0 ± 0.6 pCi/l		NA	NA	NA
pH (Std. Units)	6 - 9	7.49		NA	NA	
PRIORITY POLLUTANTS (SEE BELOW)						
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.25 ug/l		NA	NA	NA
* = Monitoring Parameter						
** = Design Value of 30 pCi/l; Not to Exceed 100 pCi/l						
*** = Monitoring parameter once per month. Already sampled this month.						
NA = Not Analyzed						
= Data received after batch was discharged						

cc: S. Anderson

Roy VanHee

Bulletin Board

Mel Roberts

Glen Schmidt

Kathy McClintock

SUMMARY OF SWTP (BATCH 038) ANALYTICAL RESULTS

9/29/94 1030

From all parties receiving samples on 9/22/94

PARAMETER	NPDES LIMITS (mg/l) Unless noted	PMC DATA RESULTS	ModNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	10 mg/l		NA	NA	NA
TSS	50 / 30	<2.00 mg/l		NA	NA	NA
ARSENIC	0.1	<0.004 mg/l		NA	NA	
CHROMIUM	0.1	<0.005 mg/l		NA	NA	
LEAD	0.1	<0.003 mg/l		NA	NA	
MANGANESE	0.1	0.007 mg/l		NA	NA	
MERCURY	0.004	0.00014 mg/l		NA	NA	
SELENIUM	0.02	0.00520 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	0.019 ug/l		NA	NA	
FLUORIDE	4.0	2.99 mg/l		NA	NA	
NITRATE + NITRITE AS N	20	<0.02 mg/l		NA	NA	
SULFATE	500	219 mg/l		NA	NA	
CHLORIDE	*	232 mg/l		NA	NA	
GROSS ALPHA	*	5.9 ± 5.1 pCi/l		NA	NA	2.2 ± 1.1 pCi/l
GROSS BETA	*	11 ± 5 pCi/l		NA	NA	9.2 ± 1.2 pCi/l
URANIUM, TOTAL	**	0.4 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-226	*	***		NA	NA	
RADIUM-228	*	***		NA	NA	
THORIUM-230	*	***		NA	NA	NA
THORIUM-232	*	***		NA	NA	NA
pH (Std. Units)	6 - 9	6.91		NA	NA	
PRIORITY POLLUTANTS (SEE BELOW)						
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.19 ug/l		NA	NA	NA
* = Monitoring Parameter						
** = Design Value of 30 pCi/l; Not to Exceed 100 pCi/l						
*** = Monitoring parameter once per month. Already sampled this month.						
NA = Not Analyzed						
= Data received after batch was discharged						

cc: S. Anderson

Mel Roberts

Roy VanHee

Glen Schmidt

Bulletin Board

Kathy McClintock

St. Louis County
Department of Health

September 28, 1994

Kenneth V. Miller
Bureau of Radiological Health
Missouri Department of Health
Jefferson City, MO 65102

Dear Mr. Miller:

The level of Gross Alpha and Gross Beta in the commercial samples from St. Charles County Court, Weldon Springs, Treatment Plant are as follows:

DATE:	<u>GROSS ALPHA</u>	<u>GROSS BETA</u>	<u>MDL (pCi/L)</u>
[08-01-94/08/31/94]			
Raw Water	3.3 ± 1.5	6.7 ± 1.0	1.0
Finished Water	< 1.0	5.0 ± 1.1	1.0

Sincerely,

Wayne E. Black
Wayne E. Black, Ph.D.
Laboratory Director (77)

Buzz Westfall
County Executive

Alpha Fowler Bryan, M.D.
Director

111 S. Meramec Avenue
Clinton, Missouri 63105 WEB:y

Phone: (314) 854-6000
Fax: (314) 854-6435
TDD: (314) 854-6446

pc - Dept. of Natural Resources - WSP - Jefferson City
Dept. of Natural Resources - WSP - St. Louis
✓ Mr. Thomas W. Aaron, St. Charles County Court, Weldon Springs
& St. Charles County Water

DATE: 10/03/94

ST. CHARLES COUNTY WATER DEPARTMENT

MONTHLY WATER USAGE REPORT

MONTH OF: September	Monthly Usaged	Daily Avg.	Y to D Usaged	Daily Avg.
PLANT PRODUCTION	: 335112000	: 11.10	: 2823857000	: 10.34
PLANT USE	: 9265000	: 0.30	: 140303000	: 0.51
DELIVERED TO SYSTEM	: 325847000	: 10.80	: 2683554000	: 9.83
MISSOURI CITIES WATER	: 246780000	: 8.20	: 2045800000	: 7.49
WATER DISTRICT #2 24" LINE	: 63959000	: 2.10	: 444971000	: 1.63
WATER DIST. #2 NEW MELLE	: 6208000	: 0.20	: 47101000	: 0.17
NATIONAL GUARD AREA	: 000	: 0	: 21000	
TOTAL METER SALES	: 316947000	: 10.50	: 2537893000	: 9.29
UNMETERED AND UNACCOUNTED	: 8900000	: 0.30	: 145661000	: 0.53

INVENTORY OF CHEMICALS

	LIME	CHLORINE
PREV. BALANCE	+1 156257	+1 5856
RECEIVED	+1 559600	+1 32000
TOTAL	=1 715857	=1 37856
USED	-1 578811	-1 25770
BALANCE	=1 137046	=1 12086
POUNDS PER 1000 GALLONS	=1 1.72	=1 0.0768
PARTS PER MILLION	=1 207.1	=1 9.22
AVG. POUNDS PER DAY	=1 19294	=1 859
POUNDS USED YEAR TO DATE	=1 4110659	=1 199660

DATE: 10/03/94

FOR THE MONTH OF: September

METER READINGS

ACCOUNT # METER TO: 9/30/94 FROM: 8/31/94 USED

MISSOURI CITIES BOOSTER STATION

ULTRA SONIC #1	+	885977	-	721640	=	164337
ULTRA SONIC #2	+	517201	-	441629	=	75572
TOTALIZER	+	4121578	-	3877076	=	244502000

METERS BEFORE MISSOURI CITIES BOOSTER STATION

		TO: 9/26/94	FROM: 8/25/94	USED			
04-50-1328350	1. FH ANNEX 4"	+	1088	-	1020	=	68000
04-50-1328500	2. MO STATE SHED	+	170	-	166	=	4000
04-50-1330000	3. DOE LAB LARGE	+	380	-	365	=	15000
	SMALL	+	9114	-	8159	=	955000
04-50-1330401	4. DOE FIRE LINE	+	14717	-	13939	=	778000
04-50-1330701	5. DOE TRAILERS	+	82	-	82	=	
04-50-1330100	6. DOE 8" #1 LARGE	+	5746	-	5643	=	103000
	SMALL	+	6020	-	5990	=	30000
04-50-1330200	7. DOE 8" #2 LARGE	+	1905	-	1853	=	52000
	SMALL	+	2425	-	2410	=	15000
04-50-1320200	8. DOE 3"	+	2718	-	2572	=	146000
04-50-1328550	9. FH SCHOOL	+	12391	-	12279	=	112000
					TOTAL	=	2278000

MISSOURI CITIES TOTAL = 246780000

WATER DIST. #2 24" LINE

	TO: 9/30/94	FROM: 8/31/94	USED			
24" EAST	+	201747	-	201747	=	
24" WEST	+	817481	-	753522	=	63959000
BYPASS	+	2340	-	2340	=	

WATER DIST. #2 TOTAL = 63959000

NEW MELLE + 227992 - 221784 = 6208000

MONTHLY REPORT

NOVEMBER 1994

BY

Stanley M. Remington

Consulting Hydrologist

I. CHEMICAL ANALYSES

The results from the analyses of well number PW-9 were received and are appended. This well was sampled on October 20, 1994. The well was analyzed for total uranium, gross alpha and beta and nitroaromatics. All of the results were normal.

On November 29, 1994 the quarterly sampling was taken by me and the Department of Energy. We sampled wells number PW-9 and RMW-2.

This group of wells include the usual parameters (see above) plus several metals, nitrates and at the request of the County Engineer the wells will be tested for pesticides, herbicides and Atrazine, another common herbicide used by farmers in all states where corn is grown. In fact it is the primary herbicide used by corn growers. There was concern voiced by many citizens of central Illinois last month about the amount of herbicides showing up in the Mississippi River. Because of this, Joe R. Nichols thought we should test for any of the parameters in our wells.

Also on November 29, 1994 I tested a treated batch of quarry water supplied to me by the Department of Energy. The

quarry was receiving considerable rain water during November, so it had to be pumped down to its working level, that is the water level which the DOE keeps at the quarry to enable them to remove the solid waster without creating any dust. It is anticipated that one more batch will have to be removed.

II. FUTURE PLANS

I will sample one of the PW wells close to the Missouri River during mid December and include pesticides, herbicides and Atrazine. Their reason for this is to see if the Missouri River has these contaminants in quantities which may be hazardous. This has not ever happened during the past 6 years in which we have tested for pesticides. No herbicides were ever tested for. The wells nearest the Missouri River receive most of their recharge from the Missouri River.

III. MISCELLANEOUS

Appended is the St. Charles County Water Department Monthly Water Usage report dated 11/1/94.

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

November 17, 1994

Stanley M. Remington
919 Broadmoor Lane
St. Charles, MO 63301

RE: ATAS #11343.01
Weldon Spring

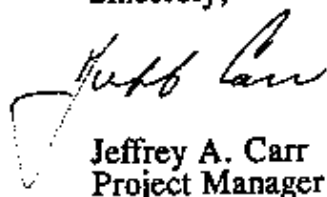
Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on October 20, 1994.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,



Jeffrey A. Carr
Project Manager

Enclosures

JAC/mb

ATAS

"Professional Commitment"

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1134301R(211)

DATE : 11-17-94

SAMPLE MATRIX : WATER
ATAS EPISODE : #11343
DATE SUBMITTED: 10-20-94
DATE ANALYZED : 11-09-94
PROJECT : WELDON SPRING

CLIENT ID	ATAS ID	UNITS	RADIONUCLIDE	RESULT
PW-9	11343.01	pCi/L	GROSS ALPHA	0 +/- 3*
PW-9	11343.01	pCi/L	GROSS BETA	6 +/- 3*
PW-9	11343.01	mg/L	TOTAL URANIUM	0.006

* VARIABILITY OF THE RADIOACTIVE DISINTEGRATION PROCESS (COUNTING ERROR) AT THE 95%
CONFIDENCE LEVEL, 1.96σ.

pCi/L = PICOCURIES PER LITER
mg/L = PARTS PER MILLION (PPM)

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1134301E(211)

DATE : 11-17-94

SAMPLE MATRIX : WATER
ATAS # : 11343.01
DATE SUBMITTED: 10-20-94
DATE ANALYZED : 10-24-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : PW-9

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

<u>EXPLOSIVE</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

NOT DETECTED ABOVE REPORTING LIMIT

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: BK1024E(211)

DATE : 11-17-94

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 10-20-94
DATE ANALYZED : 10-24-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

N. = NOT DETECTED ABOVE REPORTING LIMIT

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: QC1024E(211)

DATE : 11-17-94

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE
DATE SUBMITTED: 10-20-94
DATE ANALYZED : 10-24-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
SAMPLE ID : LABORATORY CONTROL SAMPLE

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

COMPOUND	SPIKE ADDED (ug/L)	AMT. FOUND SMPL. (ug/L)	AMT. FOUND LCS (ug/L)	PERCENT RECOVERY	QC LIMITS RECOVERY
HMX	1600	ND	1540	96 %	46-151
RDX	1300	ND	1360	105 %	72-129
1,3,5-TNB	900	ND	879	98 %	74-118
2,4,6-TNB	1650	ND	1870	113 %	58-120
1,3-DNB	475	ND	507	107 %	79-132
TNT	750	ND	814	109 %	61-145
NITROBENZENE	850	ND	900	106 %	68-135
2,6 DNT	1150	ND	1200	104 %	77-125
2,4 DNT	700	ND	716	102 %	70-134
o-NITROTOLUENE	1450	ND	1570	108 %	73-131
p-NITROTOLUENE	1000	ND	1030	103 %	73-116
m-NITROTOLUENE	950	ND	1020	107 %	71-127



CHAIN OF CUSTODY RECORD

10

[illegible][illegible]

					DATE/TIME
S.M. Evans	10/20/96	Darlene Moseley	hbpc/pj	00-1	
	12:00				

DATE: 11/01/94

ST. CHARLES COUNTY WATER DEPARTMENT

MONTHLY WATER USAGE REPORT

MONTH OF: October

	Monthly Used	Daily Avg	Y to D Used	Y to D Avg
PLANT PRODUCTION	282391000	9.10	3106248000	10.22
PLANT USE	8686000	0.30	148989000	0.49
DELIVERED TO SYSTEM	273705000	8.80	2957259000	9.73
MISSOURI CITIES WATER	228892000	7.40	2274692000	7.48
WATER DISTRICT #2 24" LINE	36172000	1.70	481143000	1.58
WATER DIST. #2 NEW MELLE	5313000	0.20	52414000	0.17
NATIONAL GUARD AREA	000	0	21000	
TOTAL METER SALES	270377000	8.70	2808270000	9.23
UNMETERED AND UNACCOUNTED	3328000	0.10	148889000	0.49

INVENTORY OF CHEMICALS

	LIME	CHLORINE
PREV. BALANCE	+ 137046	+ 12086
RECEIVED	+ 399580	+ 15000
TOTAL	= 536626	= 28086
USED	- 410250	- 19550
BALANCE	= 126376	= 8536
POUNDS PER 1000 GALLONS	= 1.45	= 0.069
PARTS PER MILLION	= 174	= 8.30
AVG. POUNDS PER DAY	= 13234	= 631
POUNDS USED YEAR TO DATE	= 452090	= 219210

DATE: 11/01/94

FOR THE MONTH OF: October

METER READINGS

ACCOUNT #

METER

TO: 10/31/94 FROM: 09/30/94 USAGED

MISSOURI CITIES BOOSTER STATION

ULTRA SONIC #1 +: 885977

-: 37104

=:

ULTRA SONIC #2 +: 517201

-: 589477

=:

TOTALIZER +: 4121578

-: 4348748

=: 227170000

METERS BEFORE MISSOURI CITIES BOOSTER STATION

TO: 10/25/94 FROM: 09/26/94 USAGED

04-50-1328350

1. FH ANNEX 4"

+: 1126

-: 1088

=:

38000

04-50-1328500

2. MD STATE SHED

+: 176

-: 170

=:

6000

04-50-1330000

3. DOE LAB LARGE

+: 385

-: 380

=:

5000

SMALL

+: 9801

-: 9114

=:

687000

04-50-1330401

4. DOE FIRE LINE

+: 15283

-: 14717

=:

566000

04-50-1330701

5. DOE TRAILERS

+: 82

-: 82

=:

04-50-1330100

6. DOE 8" #1 LARGE

+: 5850

-: 5746

=:

104000

SMALL

+: 6045

-: 6020

=:

25000

04-50-1330200

7. DOE 8" #2 LARGE

+: 1933

-: 1905

=:

28000

SMALL

+: 2430

-: 2425

=:

5000

04-50-1320200

8. DOE 3"

+: 2893

-: 2718

=:

175000

04-50-1328550

9. FH SCHOOL

+: 12474

-: 12391

=:

83000

TOTAL

=: 1722000

MISSOURI CITIES TOTAL =: 228892000

WATER DIST. #2 24" LINE

TO: 11/01/94 FROM: 09/30/94 USAGED

24" EAST

+: 201747

-: 201747

=:

24" WEST

+: 853663

-: 817481

=:

36172000

BYPASS

+: 2340

-: 2340

=:

WATER DIST. #2 TOTAL

=: 36172000

NEW MELLE

+: 233205

-: 227992

=:

5313000

MONTHLY REPORT

DECEMBER 1994

BY

Stanley M. Remington
Consulting Hydrologist

I. CHEMICAL ANALYSES

On November 21, 1994 a sample of treated quarry water was taken. The results are appended. No changes were noted from all previous analyses of the quarry water. All are well below the NPDES limits.

On November 29, 1994 a sample of treated water from the Weldon Spring site was taken. The results are appended. Again, all of the parameters were well below the NPDES limits.

Also on November 29, 1994, I sampled wells numbered PW-9 and RMW-2 for the quarterly sampling. In addition to the regular parameters tested, pesticides, herbicides and Atrazine (the herbicide for corn) were tested. No detections were noted in any of the pesticides tested for as well as any herbicides. All the other chemical parameters showed normal concentrations, that is they are at or near the previous samplings during the past six year. All are well below NPDES limits. They are appended.

On December 16, 1994, well number PW-4 was tested for Gross Alpha and Beta, total Uranium, Nitroaromatics, and the same pesticides, herbicides and Atrazine as those tested in wells PW-9 and RMW-2 last month. PW-9 is located about

25 feet from the levee at the Missouri river. Most of the recharge from this well comes from the Missouri river. So I wanted to see if any pesticides, herbicides or Atrazine is present in any of our pumping wells near the Missouri river. I have not yet received the results from this test.

II. FUTURE PLANS

I will sample well number PW-8 during mid-January, 1995.

III. MISCELLANEOUS

Appended are the results of Gross Alpha and Gross Beta in the commercial samples from St. Charles Court, Weldon Springs, Treatment Plant. These are dated 9/1/94 - 9/30/94. Also enclosed is the St. Charles County Water Department Monthly Water Usage Report.

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

November 30, 1994

Stanley M. Remington
919 Broadmoor Lane
St. Charles, MO 63301

RE: ATAS #11676.01
WSSRAP

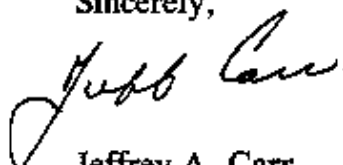
Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on November 21, 1994.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,



Jeffrey A. Carr
Project Manager

Enclosures

JAC/mb

ATAS

"Professional Commitment"

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1167601E(211)

DATE : 11-30-94

SAMPLE MATRIX : WATER
ATAS # : 11676.01
DATE SUBMITTED: 11-21-94
DATE EXTRACTED: 11-22-94
DATE ANALYZED : 11-22-94
METHOD REF. : SW846-8080, EPA METHODOLOGY
PROJECT : WSSRAP
SAMPLE ID : #1 NP-EPQ1-112194-C

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>COMPOUND</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
2,6-DINITROTOLUENE	0.0118	ND
2,4-DINITROTOLUENE	0.0235	ND

QA/QC SURROGATE RECOVERY

TETRACHLORO-M-XYLENE	74 %
DECACHLOROBIPHENYL	65 %

ND= NOT DETECTED ABOVE REPORTING LIMIT

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: BK1122E(211)

DATE : 11-30-94

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 11-21-94
DATE EXTRACTED: 11-22-94
DATE ANALYZED : 11-22-94
METHOD REF. : SW846-8080, EPA METHODOLOGY
PROJECT : WSSRAP
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>COMPOUND</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
2,6-DINITROTOLUENE	0.010	ND
2,4-DINITROTOLUENE	0.020	ND

QA/QC SURROGATE RECOVERY

TETRACHLORO-M-XYLENE	52 %
DECACHLOROBIPHENYL	59 %

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: QC1122E(211)

DATE : 11-30-94

SAMPLE MATRIX : WATER
ATAS # : SPIKE BLANK/SPIKE BLANK DUPLICATE
DATE SUBMITTED: 11-21-94
DATE EXTRACTED: 11-22-94
DATE ANALYZED : 11-22-94
METHOD REF. : SW846-8080, EPA METHODOLOGY
SAMPLE ID : SPIKE BLANK/SPIKE BLANK DUPLICATE

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

COMPOUND	SPIKE ADDED (ug/L)	AMT. FOUND BLK (ug/L)	AMT. FOUND SB (ug/L)	SB PERCENT RECOVERY
2,4 DNT	0.250	ND	0.187	75 %
2,4 DNT	0.250	ND	0.187	75 %

COMPOUND	AMT. FOUND SBD (ug/L)	SBD PERCENT RECOVERY	RPD
2,6 DNT	0.219	88 %	16 %
2,4 DNT	0.223	89 %	17 %

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1167601R(211)

DATE : 11-30-94

SAMPLE MATRIX : WATER
ATAS EPISODE : #11676
DATE SUBMITTED: 11-21-94
DATE ANALYZED : 11-29-94
PROJECT : WSSRAP

CLIENT ID	ATAS ID	UNITS	RADIONUCLIDE	RESULT
#1 NP-EP01-112194-C	11676.01	pCi/L	GROSS ALPHA	2 +/- 2*
#1 NP-EP01-112194-C	11676.01	pCi/L	GROSS BETA	6 +/- 3*
#1 NP-EP01-112194-C	11676.01	mg/L	TOTAL URANIUM	<0.005

* VARIABILITY OF THE RADIOACTIVE DISINTEGRATION PROCESS (COUNTING ERROR) AT THE 95%
CONFIDENCE LEVEL, 1.96σ.

pCi = PICOCURIES PER LITER

mg/L = PARTS PER MILLION (PPM)

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1167601M(211)

DATE : 11-30-94

SAMPLE MATRIX : WATER
ATAS # : 11676.01
DATE SUBMITTED: 11-21-94
PROJECT : WSSRAP
SAMPLE ID : #1 NP-EPQ1-112194-C

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
INORGANICS					
NITRATE-NITRITE	0.10	mg/L	0.10	11-28-94	EPA 353.2
METALS					
ARSENIC	10.0	ug/L	ND	11-28-94	SW 6010
CHROMIUM	1.0	ug/L	ND	11-28-94	SW 6010
COPPER	4.0	ug/L	ND	11-28-94	SW 6010
LEAD	3.0	ug/L	ND	11-28-94	SW 6010
MANGANESE	1.0	ug/L	17.2	11-28-94	SW 6010
MERCURY	0.15	ug/L	ND	11-28-94	SW 7470
SELENIUM	5.0	ug/L	6.1	11-28-94	SW 6010

ug/L = PARTS PER MILLION (PPM)

ug/L = PARTS PER BILLION (PPB)

ND = NOT DETECTED ABOVE REPORTING LIMIT

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: QC1128M(211)

DATE : 11-30-94

QA/QC

<u>DESCRIPTION</u>		<u>PARAMETER</u>	<u>RESULTS</u>
METHOD BLANK	11-28-94	ARSENIC	<10.0 ug/L
METHOD BLANK	11-28-94	CHROMIUM	<1.0 ug/L
METHOD BLANK	11-28-94	COPPER	<4.0 ug/L
METHOD BLANK	11-28-94	LEAD	<3.0 ug/L
METHOD BLANK	11-28-94	MANGANESE	<1.0 ug/L
METHOD BLANK	11-28-94	SELENIUM	<5.0 ug/L
METHOD BLANK	11-28-94	MERCURY	<0.15 ug/L
METHOD BLANK	11-28-94	NITRATE-NITRITE	<0.10 mg/L
BLANK SPIKE	11-28-94	ARSENIC	110 % RECOVERY
BLANK SPIKE	11-28-94	CHROMIUM	103 % RECOVERY
BLANK SPIKE	11-28-94	COPPER	96 % RECOVERY
BLANK SPIKE	11-28-94	LEAD	100 % RECOVERY
BLANK SPIKE	11-28-94	MANGANESE	101 % RECOVERY
BLANK SPIKE	11-28-94	SELENIUM	108 % RECOVERY
BLANK SPIKE	11-28-94	MERCURY	98 % RECOVERY
BLANK SPIKE	11-28-94	NITRATE-NITRITE	92 % RECOVERY

Validation Documentation

PSA 114.1.2.1. Rev. 4. EMedico 1197

AUTHORIZATION

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

December 7, 1994

Stanley M. Remington
919 Broadmoor Lane
St. Charles, MO 63301

RE: ATAS #11724.01
Weldon Spring

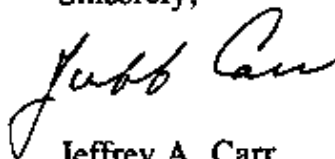
Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on November 29, 1994.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,



Jeffrey A. Carr
Project Manager

Enclosures

JAC/pck

ATAS

"Professional Commitment"

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1172401EX(212)

DATE : 12-07-94

SAMPLE MATRIX : WATER
ATAS # : 11724.01
DATE SUBMITTED: 11-29-94
DATE EXTRACTED: 11-30-94
DATE ANALYZED : 12-02-94
METHOD REF. : SW846-8090, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : NP-EPSI-112994-C

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
2,6 DNT	0.108	ND
2,4 DNT	0.0215	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: BK1130EX(212)

DATE : 12-07-94

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 11-29-94
DATE EXTRACTED: 11-30-94
DATE ANALYZED : 12-02-94
METHOD REF. : SW846-8090, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

<u>EXPLOSIVE</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
2,6 DNT	0.010	ND
2,4 DNT	0.020	ND

CLIENT: STANLEY M. REMINGTON
 919 BROADMOOR LANE
 ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: QC1130EX(212)

DATE : 12-07-94

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE
DATE SUBMITTED: 11-29-94
DATE EXTRACTED: 11-30-94
DATE ANALYZED : 12-02-94
METHOD REF. : SW846-8090, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : LABORATORY CONTROL SAMPLE

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

COMPOUND	SPIKE ADDED (ug/L)	AMT. FOUND SMPL. (ug/L)	AMT. FOUND LCS (ug/L)	PERCENT RECOVERY
2,6 DNT	0.250	0	0.158	63 %
2,4 DNT	0.250	0	0.157	63 %

	AMT. FOUND SBD (ug/L)	PERCENT RECOVERY	PERCENT DIFFERENCE
2,6 DNT	0.204	82 %	26 %
2,4 DNT	0.205	82 %	26 %

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1172401MT(212)

DATE : 12-07-94

SAMPLE MATRIX : WATER
ATAS # : 11724.01
DATE SUBMITTED: 11-29-94
PROJECT : WELDON SPRING
SAMPLE ID : NP-EPSI-112994-C

PARAMETER	DET LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
INORGANICS					
NITRATE-NITRITE	0.10	mg/L	0.31	12-06-94	EPA 353.2
METALS					
ARSENIC	10.0	ug/L	ND	12-02-94	SW 6010
CHROMIUM	1.0	ug/L	ND	12-02-94	SW 6010
COPPER	4.0	ug/L	ND	12-02-94	SW 6010
LEAD	3.0	ug/L	ND	12-02-94	SW 6010
MANGANESE	1.0	ug/L	3.7	12-02-94	SW 6010
MERCURY	0.15	ug/L	ND	12-02-94	SW 7470
SELENIUM	5.0	ug/L	ND	12-02-94	SW 6010

ug/L = PARTS PER BILLION (PPB)

mg/L = PARTS PER MILLION (PPM)

/ = NOT DETECTED ABOVE QUANTITATION LIMIT

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 11724RADW(212)

DATE : 12-07-94

SAMPLE MATRIX : WATER
ATAS EPISODE : #11724
DATE SUBMITTED: 11-29-94
PROJECT : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
NP-EPSI-112994-C	11724.01	GROSS ALPHA	12 +/- 6*
NP-EPSI-112994-C	11724.01	GROSS BETA	12 +/- 5*
NP-EPSI-112994-C	11724.01	TOTAL URANIUM (mg/L)	<0.005

* VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95%
CONFIDENCE LEVEL, 1.96σ.

pCi/L = PICOCURIES PER LITER

mg/L = PARTS PER MILLION (PPM)

ENVIRONMENTAL SAMPLE CHAIN - OUSTUDY / AUTHORIZATION FORM
WELDON SPRING SITE REMEDIAL ACTION PROJECT (WSSRAP)
 7295 HIGHWAY 94 SOUTH, ST. CHARLES, MO 63304
 TELEPHONE (314) 441-8086 TELEX (314) 447-0803

Validation Documentation ☐

ES-1114 (1.1), Rev. 4, Effective 11/90

WSSRAP Contact: Phone Number: Request Number:		Lab/P.O. #: Requisitioner: Turnaround Time: <input type="checkbox"/> Standard <input type="checkbox"/> Expedited <input type="checkbox"/> Priority <input type="checkbox"/> Urgent <input type="checkbox"/> Emergency		Dept./Cost Code:				
#	Sample ID	QC	Date Sampled	Matrix	Cont.	Preserv.	Parameters	Arch. (Y/N)
	NP-EPS1-112994-C		11/29/94	Water	1-1L	HNO ₃	As, Cd, Hg, Mn, Se, Pb	11-24-94 103-BA-AL
					1-1L	ICE	2, 4-DNT	
					1-1L	H ₂ SO ₄	NO ₃	
					1-1L	HNO ₃	U, Gross α, β	11724.01

Relinquished By: [Signature] Received By: [Signature] Date: 11/29/94 Time: 1145
 Sampler's Signature: [Signature] Checked By: [Signature] Technical Reviewer: _____
 Date: _____

Relinquished By	Received By	Date	Time	Reason for Transfer	Seal Intact? (Y/N)	Cooler Temp
<u>[Signature]</u>	<u>[Signature]</u>	<u>11/29/94</u>	<u>1145</u>			
<u>[Signature]</u>	<u>[Signature]</u>	<u>11/29/94</u>	<u>1231</u>			

AUTHORIZATION

MK - F Procurement Date: _____ ES&H Date: _____ Site Shipping Officer Date: _____

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

December 21, 1994

Stanley M. Remington
919 Broadmoor Lane
St. Charles, MO 63301

RE: ATAS #11726.01-#11726.02
Weldon Spring

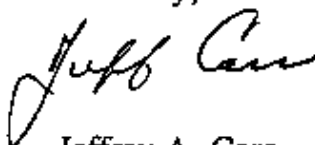
Dear Mr. Remington:

Enclosed are the analytical reports for the samples received in our laboratory on November 29, 1994.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,



Jeffrey A. Carr
Project Manager

Enclosures

JAC/pck

ATAS

"Professional Commitment"

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080
CLIENT: STANLEY M. REMINGTON REPORT: 1172601PT(214)
919 BROADMOOR LANE
ST. CHARLES, MO 63301 DATE : 12-21-94
ATTN: STANLEY M. REMINGTON

SAMPLE MATRIX : WATER
ATAS # : 11726.01
DATE SUBMITTED: 11-29-94
DATE EXTRACTED: 12-02-94
DATE ANALYZED : 12-08-94
METHOD REF. : SW846-8080, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : RMW-2

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

<u>PESTICIDES/PCB'S</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
ALPHA-BHC	0.003	ND
GAMMA-BHC(LINDANE)	0.004	ND
BETA-BHC	0.006	ND
DELTA-BHC	0.009	ND
HEPTACHLOR	0.003	ND
ALDRIN	0.004	ND
HEPTACHLOR EPOXIDE	0.083	ND
ENDOSULFAN I	0.014	ND
4,4-DDE	0.004	ND
DIELDRIN	0.002	ND
ENDRIN	0.006	ND
4,4-DDD	0.011	ND
ENDOSULFAN II	0.004	ND
4,4-DDT	0.012	ND
ENDRIN ALDEHYDE	0.023	ND
ENDOSULFAN SULFATE	0.066	ND
METHOXYCHLOR	0.180	ND
CHLORDANE (TECHNICAL)	0.014	ND
TOXAPHENE	0.240	ND
AROCHLOR-1016	1.00	ND
AROCHLOR-1221	1.00	ND
AROCHLOR-1232	1.00	ND
AROCHLOR-1242	1.00	ND
AROCHLOR-1248	1.00	ND
AROCHLOR-1254	1.00	ND
AROCHLOR-1260	1.00	ND

OA/OC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150) 52 %
TETRACHLORO-M-XYLENE(30-150) 69 %

N = NOT DETECTED ABOVE REPORTING LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1172602PT(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS # : 11726.02
DATE SUBMITTED: 11-29-94
DATE EXTRACTED: 12-02-94
DATE ANALYZED : 12-08-94
METHOD REF. : SW846-8080, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : PW-9

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

<u>PESTICIDES/PCB'S</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
ALPHA-BHC	0.003	ND
GAMMA-BHC(LINDANE)	0.004	ND
BETA-BHC	0.006	ND
DELTA-BHC	0.009	ND
HEPTACHLOR	0.003	ND
ALDRIN	0.004	ND
HEPTACHLOR EPOXIDE	0.083	ND
ENDOSULFAN I	0.014	ND
4,4-DDE	0.004	ND
DIELDRIN	0.002	ND
ENDRIN	0.006	ND
4,4-DDD	0.011	ND
ENDOSULFAN II	0.004	ND
4,4-DDT	0.012	ND
ENDRIN ALDEHYDE	0.023	ND
ENDOSULFAN SULFATE	0.066	ND
METHOXYCHLOR	0.180	ND
CHLORDANE (TECHNICAL)	0.014	ND
TOXAPHENE	0.240	ND
AROCHLOR-1016	1.00	ND
AROCHLOR-1221	1.00	ND
AROCHLOR-1232	1.00	ND
AROCHLOR-1242	1.00	ND
AROCHLOR-1248	1.00	ND
AROCHLOR-1254	1.00	ND
AROCHLOR-1260	1.00	ND

QA/QC SURROGATE RECOVERYDECACHLOROBIPHENYL(30-150) 68 %
TETRACHLORO-M-XYLENE(30-150) 67 %

NOT DETECTED ABOVE REPORTING LIMIT

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: BK1202PT(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 11-29-94
DATE EXTRACTED: 12-02-94
DATE ANALYZED : 12-08-94
METHOD REF. : SW846-8080, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

<u>PESTICIDES/PCB'S</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
ALPHA-BHC	0.003	ND
GAMMA-BHC(LINDANE)	0.004	ND
BETA-BHC	0.006	ND
DELTA-BHC	0.009	ND
HEPTACHLOR	0.003	ND
ALDRIN	0.004	ND
HEPTACHLOR EPOXIDE	0.083	ND
ENDOSULFAN I	0.014	ND
4,4-DDE	0.004	ND
DIELDRIN	0.002	ND
ENDRIN	0.006	ND
4,4-DDD	0.011	ND
ENDOSULFAN II	0.004	ND
4,4-DDT	0.012	ND
ENDRIN ALDEHYDE	0.023	ND
ENDOSULFAN SULFATE	0.066	ND
METHOXYCHLOR	0.180	ND
CHLORDANE (TECHNICAL)	0.014	ND
TOXAPHENE	0.240	ND
AROCHLOR-1016	1.00	ND
AROCHLOR-1221	1.00	ND
AROCHLOR-1232	1.00	ND
AROCHLOR-1242	1.00	ND
AROCHLOR-1248	1.00	ND
AROCHLOR-1254	1.00	ND
AROCHLOR-1260	1.00	ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150) 56 %
TETRACHLORO-M-XYLENE(30-150) 69 %

NOT DETECTED ABOVE REPORTING LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

LABORATORY QUALITY CONTROL SEQUENCE

METHOD : EPA 8080
 EXTRACTION DATE : 12-02-94
 ANALYSIS DATE : 12-08-94

REPORT DATE: 12-21-94

SPIKE/SPIKE DUPLICATE RESULTS

COMPOUND	SPIKE CONC. (ug/L)	SAMPLE CONC. (ug/L)	SPIKE CONC.	PERCENT RECOVERY
GAMMA-BHC	0.200	ND	0.153	77 %
HEPTACHLOR	0.200	ND	0.171	86 %
ALDRIN	0.200	ND	0.139	70 %
DIELDRIN	0.500	ND	0.441	88 %
ENDRIN	0.500	ND	0.493	99 %
4,4-DDT	0.500	ND	0.453	91 %

	SPIKE DUP. CONC. (ug/L)	PERCENT RECOVERY	RELATIVE PERCENT DIFFERENCE
GAMMA-BHC	0.131	66 %	15 %
HEPTACHLOR	0.160	80 %	7.2 %
ALDRIN	0.125	63 %	11 %
DIELDRIN	0.407	81 %	8.3 %
ENDRIN	0.452	90 %	9.5 %
4,4-DDT	0.425	85 %	6.8 %

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1172601GC(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS # : 11726.01
DATE SUBMITTED: 11-29-94
DATE EXTRACTED: 11-29-94
DATE ANALYZED : 11-30-94
METHOD REF. : METHOD 505
PROJECT : WELDON SPRING
SAMPLE ID : RMW-2

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

<u>COMPOUND</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
ATRAZINE	2.40	ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	58 %
TETRACHLORO-M-XYLENE(30-150)	56 %

NOT DETECTED ABOVE REPORTING LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1172602GC(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS # : 11726.02
DATE SUBMITTED: 11-29-94
DATE EXTRACTED: 11-29-94
DATE ANALYZED : 11-30-94
METHOD REF. : METHOD 505
PROJECT : WELDON SPRING
SAMPLE ID : PW-9

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

<u>COMPOUND</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
ATRAZINE	2.40	ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	73 %
TETRACHLORO-M-XYLENE(30-150)	66 %

ND = NOT DETECTED ABOVE REPORTING LIMIT
3 = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: BK1129GC(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 11-29-94
DATE EXTRACTED: 11-29-94
DATE ANALYZED : 11-30-94
METHOD REF. : METHOD 505
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

<u>COMPOUND</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
ATRAZINE	2.40	ND

OA/OC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	114 %
TETRACHLORO-M-XYLENE(30-150)	97 %

NOT DETECTED ABOVE REPORTING LIMIT
= ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

L ORATORY QUALITY CONTROL SEQUENCE

SAMPLE MATRIX : WATER
DATE EXTRACTED: 11-29-94
DATE ANALYZED : 11-30-94
METHOD REF. : METHOD 505

REPORT DATE: 12-21-94

SPIKE BLANK/SPIKE BLANK DUPLICATE RECOVERY

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

	SPIKE ADDED (ug/L)	AMT. FOUND BLK (ug/L)	AMT. FOUND SB (ug/L)	SB PERCENT RECOVERY
ATRAZINE	57.1	0	38.2	67 %

	AMT. FOUND SBD (ug/L)	PERCENT RECOVERY	PERCENT DIFFERENCE
ATRAZINE	35.5	62 %	7.8 %

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1172601HB(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS # : 11726.01
DATE SUBMITTED: 11-29-94
DATE EXTRACTED: 12-01-94
DATE ANALYZED : 12-03-94
METHOD REF. : SW846-8150, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : RMW-2

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

HERBICIDES

HERBICIDES	REPORTING LIMIT	RESULTS
2,4-D	1.60	ND
2,4-DB	5.00	ND
2,4,5-TP (SILVEX)	0.60	ND
2,4,5-T	0.60	ND
DALAPON	1.25	ND
DICAMBA	0.80	ND
DICHLOROPROP	2.40	ND
DINOSEB	0.60	ND
MCPA	500	ND
MCPB	500	ND

QA/QC SURROGATE RECOVERIES

DCAA 103 %

ND = NOT DETECTED ABOVE REPORTING LIMIT

B = ANALYTE DETECTED IN METHOD BLANK POSSIBLY BELOW THE REPORTING LIMIT.

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-008

SENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1172602HB(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS # : 11726.02
DATE SUBMITTED: 11-29-94
DATE EXTRACTED: 12-01-94
DATE ANALYZED : 12-03-94
METHOD REF. : SW846-8150, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : PW-9

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

HERBICIDES

HERBICIDES	REPORTING LIMIT	RESULTS
2,4-D	1.60	ND
2,4-DB	5.00	ND
2,4,5-TP (SILVEX)	0.60	ND
2,4,5-T	0.60	ND
DALAPON	1.25	ND
DICAMBA	0.80	ND
DICHLOROPROP	2.40	ND
DINOSEB	0.60	ND
MCPA	500	ND
MCPP	500	ND

QA/QC SURROGATE RECOVERIES

DCAA 106 %

ND = NOT DETECTED ABOVE REPORTING LIMIT

B = ANALYTE DETECTED IN METHOD BLANK POSSIBLY BELOW THE REPORTING LIMIT.

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

INT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: BK1201HB(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 11-29-94
DATE EXTRACTED: 12-01-94
DATE ANALYZED : 12-03-94
METHOD REF. : SW846-8150, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

HERBICIDES

HERBICIDES	REPORTING LIMIT	RESULTS
2,4-D	1.60	ND
2,4-DB	5.00	ND
2,4,5-TP (SILVEX)	0.60	ND
2,4,5-T	0.60	ND
DALAPON	1.25	ND
DICAMBA	0.80	ND
DICHLOROPROP	2.40	ND
DINOSEB	0.60	ND
MCPA	500	ND
MCPP	500	ND

QA/QC SURROGATE RECOVERIES

DCAA 107 %

ND = NOT DETECTED ABOVE REPORTING LIMIT

B = ANALYTE DETECTED IN METHOD BLANK POSSIBLY BELOW THE REPORTING LIMIT.

LABORATORY QUALITY CONTROL SEQUENCE

METHOD : EPA 8150
 QA SEQUENCE NO. : LABORATORY CONTROL SPIKE
 EXTRACTION DATE : 12-01-94
 ANALYSIS DATE : 12-03-94

REPORT DATE: 12-21-94

HERBICIDE LABORATORY CONTROL SPIKE RECOVERY FORM

COMPOUND	SPIKE ADDED (ug/L)	AMOUNT FOUND (ug/L)	AMOUNT FOUND CONC. (ug/L)	PERCENT RECOVERY
DALAPON	5.00	ND	2.40	48 %
DICAMBA	3.20	ND	3.17	99 %
MCQ	2000	ND	1880	94 %
MCPA	2000	ND	1880	94 %
DICHLOROPROP	9.60	ND	10.3	107 %
2,4-D	6.40	ND	5.39	84 %
2,4,5-TP (SILVEX)	2.40	ND	2.01	84 %
2,4,5-T	2.40	ND	2.09	87 %
2,4-DB	10.0	ND	7.70	77 %
DINOSEB	2.4	ND	1.38	58 %

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1172601MT(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS # : 11726.01
DATE SUBMITTED: 11-29-94
PROJECT : WELDON SPRING
SAMPLE ID : RMW-2

PARAMETER	DET LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
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INORGANICS

NITRATE-NITRITE	0.10	mg/L	ND	12-06-94	EPA 353.2
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METALS

ARSENIC	10.0	ug/L	74.4	12-02-94	SW 6010
BERYLLIUM	1.0	ug/L	ND	12-02-94	SW 6010
COPPER	4.0	ug/L	12.6	12-02-94	SW 6010
IRON	20.0	ug/L	2620	12-02-94	SW 6010
LEAD	3.0	ug/L	ND	12-02-94	SW 6010
MANGANESE	1.0	ug/L	1330	12-02-94	SW 6010
MERCURY	0.15	ug/L	0.23	12-02-94	SW 7470
ZINC	3.0	ug/L	49.0	12-02-94	SW 6010

ug/L = PARTS PER BILLION (PPB)

mg/L = PARTS PER MILLION (PPM)

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1172602MT(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS # : 11726.02
DATE SUBMITTED: 11-29-94
PROJECT : WELDON SPRING
SAMPLE ID : PW-9

PARAMETER	DET LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
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INORGANICS

NITRATE-NITRITE	0.10	mg/L	ND	12-06-94	EPA 353.2
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METALS

ARSENIC	10.0	ug/L	ND	12-02-94	SW 6010
BERYLLIUM	1.0	ug/L	ND	12-02-94	SW 6010
COPPER	4.0	ug/L	6.9	12-02-94	SW 6010
IRON	20.0	ug/L	6450	12-02-94	SW 6010
LEAD	3.0	ug/L	ND	12-02-94	SW 6010
MANGANESE	1.0	ug/L	399	12-02-94	SW 6010
MERCURY	0.15	ug/L	0.20	12-02-94	SW 7470
ZINC	3.0	ug/L	5.1	12-02-94	SW 6010

/L = PARTS PER BILLION (PPB)

ug/L = PARTS PER MILLION (PPM)

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: QC1202MT(214)

DATE : 12-21-94

QA/QC

<u>DESCRIPTION</u>		<u>PARAMETER</u>	<u>RESULTS</u>
METHOD BLANK	12-06-94	NITRATE-NITRITE	<0.1 mg/L
METHOD BLANK	12-02-94	ARSENIC	<10.0 ug/L
METHOD BLANK	12-02-94	BERYLLIUM	<1.0 ug/L
METHOD BLANK	12-02-94	COPPER	<4.0 ug/L
METHOD BLANK	12-02-94	IRON	<20.0 ug/L
METHOD BLANK	12-02-94	LEAD	<3.0 ug/L
METHOD BLANK	12-02-94	MANGANESE	<1.0 ug/L
METHOD BLANK	12-02-94	ZINC	<3.0 ug/L
METHOD BLANK	12-02-94	MERCURY	<0.15 ug/L
BLANK SPIKE	12-06-94	NITRATE-NITRITE	102 % RECOVERY
BLANK SPIKE	12-02-94	ARSENIC	105 % RECOVERY
BLANK SPIKE	12-02-94	BERYLLIUM	101 % RECOVERY
BLANK SPIKE	12-02-94	COPPER	101 % RECOVERY
BLANK SPIKE	12-02-94	IRON	101 % RECOVERY
BLANK SPIKE	12-02-94	LEAD	99 % RECOVERY
BLANK SPIKE	12-02-94	MANGANESE	102 % RECOVERY
BLANK SPIKE	12-02-94	ZINC	103 % RECOVERY
BLANK SPIKE	12-02-94	MERCURY	110 % RECOVERY

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 11726RADW(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS EPISODE : #11726
DATE SUBMITTED: 11-29-94
PROJECT : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
RMW-2	11726.01	GROSS ALPHA	16 +/- 6*
		GROSS BETA	13 +/- 4*
		TOTAL URANIUM	0.011
		(mg/L)	
PW-9	11726.02	GROSS ALPHA	0 +/- 4*
		GROSS BETA	9 +/- 4*
		TOTAL URANIUM	0.010
		(mg/L)	

* VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95%
CONFIDENCE LEVEL, 1.96σ.

pCi = PICOCURIES PER LITER

mg/L = PARTS PER MILLION (PPM)

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1172601EX(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS # : 11726.01
DATE SUBMITTED: 11-29-94
DATE ANALYZED : 12-02-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : RMW-2

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

NOT DETECTED ABOVE REPORTING LIMIT

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1172602EX(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS # : 11726.02
DATE SUBMITTED: 11-29-94
DATE ANALYZED : 12-02-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : PW-9

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

<u>EXPLOSIVE</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

NOT DETECTED ABOVE REPORTING LIMIT

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1172602DE(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS # : 11726.02 DUP
DATE SUBMITTED: 11-29-94
DATE ANALYZED : 12-02-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : PW-9

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE REPORTING LIMIT

CLIENT: STANLEY M. REMINGTON
 919 BROADMOOR LANE
 ST. CHARLES, MO 63301
 ATTN: STANLEY M. REMINGTON

REPORT: BK1202EX(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
 ATAS # : METHOD BLANK
 DATE SUBMITTED: 11-29-94
 DATE ANALYZED : 12-02-94
 METHOD REF. : SW846-8330, EPA METHODOLOGY
 PROJECT : WELDON SPRING
 SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE REPORTING LIMIT

ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: QC1202EX(214)

DATE : 12-21-94

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE
DATE SUBMITTED: 11-29-94
DATE ANALYZED : 12-02-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : LABORATORY CONTROL SAMPLE

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

COMPOUND	SPIKE ADDED (ug/L)	AMT. FOUND SMPL. (ug/L)	AMT. FOUND LCS (ug/L)	PERCENT RECOVERY
HMX	1600	0	1650	103 %
RDX	1300	0	1350	104 %
2,4,6-TNB	900	0	977	109 %
TETRYL	1650	0	2250	136 %
1,3-DNB	475	0	492	104 %
TNT	750	0	834	111 %
NITROBENZENE	850	0	891	105 %
2,6 DNT	1150	0	1280	111 %
2,4 DNT	700	0	723	103 %
o-NITROTOLUENE	1450	0	1530	106 %
p-NITROTOLUENE	1000	0	982	98 %
m-NITROTOLUENE	950	0	938	99 %



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CHAIN OF CUSTODY RECORD

[illegible]

	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME

Wm. Lawrence

HB/bc/11
CH20.1

James M. Smith

12:40
11/20/95



St. Louis County
Department of Health

November 30, 1994

Kenneth V. Miller
Bureau of Radiological Health
Missouri Department of Health
Jefferson City, MO 65102

Dear Mr. Miller:

The level of Gross Alpha and Gross Beta in the commercial samples from St. Charles County Court, Weldon Springs, Treatment Plant are as follows:

DATE:		<u>GROSS ALPHA</u>	<u>GROSS BETA</u>	<u>MDL(pCi/L)</u>
[09-01-94/09/30/94]				
Raw Water		2.9 \pm 1.4	6.3 \pm 1.0	1.0
Finished Water	<	1.0	4.6 \pm 0.5	1.0
[10/01-94/10/31/94]				
Raw Water		2.6 \pm 1.3	6.5 \pm 1.1	1.0
Finished		1.0 \pm 0.8	4.2 \pm 1.0	1.0

Sincerely,

Wayne E. Black
Wayne E. Black, Ph.D.
Laboratory Director (7)

pc - Dept. of Natural Resources - WSP - Jefferson City
Dept. of Natural Resources - WSP - St. Louis
Mr. Thomas W. Aaron, St. Charles County Court, Weldon Springs
% St. Charles County Water

Westfall
City Executive

Sha Fowler Bryan, M.D.
Director

S. Meramec Avenue
Jefferson City, Missouri 65105

Te: (314) 854-6000 WEB:y
X: (314) 854-6435
D: (314) 854-6446

DATE: 12/01/94

ST. CHARLES COUNTY WATER DEPARTMENT

MONTHLY WATER USAGE REPORT

MONTH OF: NOVEMBER	MONTHLY USAGE	DAILY AVG.	Y TO D USAGE	Y TO D AVG.
PLANT PRODUCTION	: 235623000	: 7.80	: 3341871000	: 10.01
PLANT USE	: 14678000	: 0.50	: 163667000	: 0.49
DELIVERED TO SYSTEM	: 220945000	: 7.30	: 3178204000	: 9.52
MISSOURI CITIES WATER	: 179594000	: 5.90	: 2454286000	: 7.35
WATER DISTRICT #2 24" LINE	: 32212000	: 1.10	: 513355000	: 1.54
WATER DIST. #2 NEW MELLE	: 4895000	: 0.20	: 57309000	: 0.17
NATIONAL GUARD AREA	: 000	: 0	: 21000	:
TOTAL METER SALES	: 216701000	: 7.20	: 3024971000	: 9.06
UNMETERED AND UNACCOUNTED	: 4244000	: 0.10	: 153134000	: 0.46

INVENTORY OF CHEMICALS

	LIME	CHLORINE
PREV. BALANCE	+1 126376	+1 8536
RECEIVED	+1 437400	+1 16000
TOTAL	=1 563776	=1 24536
USED	-1 301813	-1 14930
BALANCE	=1 261963	=1 9606
POUNDS PER 1000 GALLONS	=1 1.281	=1 0.041
PARTS PER MILLION	=1 154	=1 7.60
AVG. POUNDS PER DAY	=1 1160	=1 498
POUNDS USED YEAR TO DATE	=1 4822722	=1 234140

DATE: 12/01/94

FOR THE MONTH OF: NOVEMBER

METER READINGS

ACCOUNT #

METER

TO: 12/01/94 FROM: 10/31/94 USAGED

MISSOURI CITIES BOOSTER STATION

ULTRA SONIC #1 +: 151911

-: 371040

=:

ULTRA SONIC #2 +: 651970

-: 589477

=:

TOTALIZER +: 4528342

-: 4348748

=: 179594000

METERS BEFORE MISSOURI CITIES BOOSTER STATION

TO:

FROM: 10/25/94 USAGED

04-50-1328350 1. FH ANNEX 4" +:

-: 1126

=:

04-50-1328500 2. MO STATE SHED +:

-: 176

=:

04-50-1330000 3. DOE LAB LARGE +:

-: 385

=:

SMALL +:

-: 9801

=:

04-50-1330401 4. DOE FIRE LINE +:

-: 15283

=:

04-50-1330701 5. DOE TRAILERS +:

-: 82

=:

04-50-1330100 6. DOE 8" #1 LARGE +:

-: 5850

=:

SMALL +:

-: 6045

=:

04-50-1330200 7. DOE 8" #2 LARGE +:

-: 1933

=:

SMALL +:

-: 2420

=:

04-50-1320200 8. DOE 3" +:

-: 2893

=:

04-50-1328550 9. FH SCHOOL +:

-: 12474

=:

TOTAL

=:

MISSOURI CITIES TOTAL =: 179594000

WATER DIST. #2 24" LINE

TO: 12/01/94 FROM: 11/01/94 USAGED

24" EAST

+: 201742

-: 201742

=:

24" WEST

+: 885875

-: 853663

=: 32212000

BYPASS

+: 2340

-: 2340

=:

WATER DIST. #2 TOTAL =: 32212000

NEW MELLE

+: 238100

-: 233205

=: 4295000